

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 11-249839

(43)Date of publication of application : 17.09.1999

(51)Int.Cl.

G06F 3/12

(21)Application number : 10-045543

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(22)Date of filing : 26.02.1998

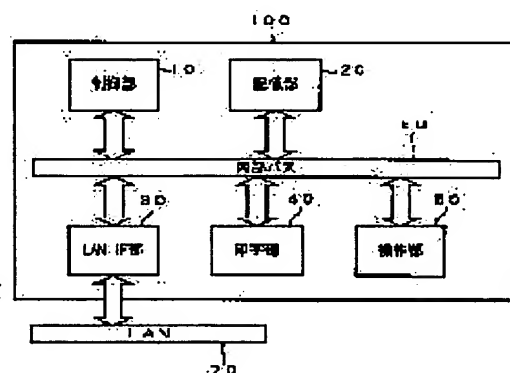
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## (54) PRINTER

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To easily set setting information for determining an operating state as desired in the case of being newly connected to a network.

**SOLUTION:** When a power source is turned on in a printer 100 newly connected to a network 70, a control part 10 starts operation according to a control program stored in the ROM of a storage part 20, and when the same setting function is turned off, the printer is activated according to setting information stored in the NVRAM of the storage part 20. When the same setting is turned on, on the other hand, the control part 10 requests transmission of the setting information to some other printer activated already through a LAN interface part 30. After the setting information transmitted from the other printer is written in a designated address of the NVRAM in the storage part 20, the printer 100 is activated again according to the written setting information.



## LEGAL STATUS

[Date of request for examination] 20.11.2002

[Date of sending the examiner's decision of rejection] 21.06.2005

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

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**CLAIMS**

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[Claim(s)]

[Claim 1] The airline printer characterized by to provide a selection means connected with the network which should acquire setting information required for job activation, and also choose equipment, an acquisition means it was chosen by said selection means, and also acquire the setting information on equipment, and a setting means acquired with said acquisition means, and also set up the operating state of self-equipment according to the setting information on equipment.

[Claim 2] Said acquisition means is an airline printer according to claim 1 characterized by providing a demand means to perform the Request to Send of setting information required for job activation, and a receiving means to receive the Request to Send of the setting information by said demand means, and also to receive the setting information from equipment, to the other equipments on a network.

[Claim 3] Said setting means is an airline printer according to claim 1 or 2 characterized by setting operating state as said storage means according to the setting information memorized beforehand when it has a storage means to memorize the setting information set up beforehand and setting information cannot be acquired from other equipments with said acquisition means.

[Claim 4] The airline printer characterized by providing a receiving means to have connected with the network and also to receive the Request to Send of setting information required for job activation from equipment, and a transmitting means to transmit the setting information on self-equipment to the other equipments of a transmitting agency if said receiving means receives the Request to Send of setting information.

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**DETAILED DESCRIPTION**

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**[Detailed Description of the Invention]****[0001]**

**[Field of the Invention]** This invention relates to the airline printer connected to networks, such as LAN, and when it newly connects with a network especially, it relates to the airline printer which operates from the same contents of a printing setting as other airline printers.

**[0002]**

**[Description of the Prior Art]** When performing the same printing setup to two or more airline printers, as a well-known technique, the following are known as an approach of mitigating the load of the setting actuation. For example, the technique of attaining simplification of the setting actuation by the bar code input is indicated by JP,6-15911,A by making an airline printer enable recognition of a bar code. Moreover, a cartridge is made a removable configuration to an output unit, and control information and directions information are made to memorize inside a cartridge in JP,6-340142,A. And the information on a cartridge is downloaded from an output unit, and the setting approach of controlling a setup of an output unit etc. based on the information is indicated. Furthermore, in JP,8-197813,A, one airline printer which manages setting information is made to specify, and two or more airline printers in which the airline printer and communication link are possible are connected. And when the setting information on the appointed airline printer is changed, the method of attaining simplification of setting actuation is indicated by making an automatic change as well as a setup of a self-opportunity to the airline printer connected to the airline printer.

**[0003]**

**[Problem(s) to be Solved by the Invention]** In delivering many airline printers collectively to a certain location, in order to double with an environment to use at a delivery-of-goods place, it is necessary to carry out all setup of each airline printer to a setup of this opportunity. However, with the conventional technique, there was troublesomeness by which those who set up set one set at a time as an airline printer by inserting a cartridge with the approach of setting up using external storage, such as a cartridge, for example. Also although it says that setting actuation became simple how much when arranged in the location which many airline printers left especially, if the migration in the case of the setup etc. is taken into consideration, it cannot be said that setting actuation was mitigated as a whole. Moreover, hard devices, such as a cartridge entry, had to be attached in the airline printer body for the setup, it was possible that the size of an airline printer becomes large, and development cost may also have increased. This is the same also about the setting approach by the bar code input.

**[0004]** Moreover, with the conventional technique made to set automatically the setting information on two or more airline printers like the one appointed airline printer, modification of a printing setup of the appointed airline printer will change all other connected airline printers automatically. for this reason, the case where unarranging arises by change of printing environments, such as migration of arrangement of an airline printer, for it to be the same setup as other airline printers -- the setting information on that airline printer -- other airline printers -- in order to make it not make it dependent on it, the activity of removing connection between airline printers had to be done, and there was a problem that actuation became complicated.

**[0005]** Moreover, in newly installing an airline printer, a case so that he may want to change only some setting items is possible about a setup according to individual only like the print queue name referred to, for example like the contents of the airline printer already connected about the detailed setup. However, with the conventional technique, after making it connect with the airline printer already installed and performing the

same setup, connection was canceled, a setup of the airline printer for which it asks had to be changed, and there was a problem that actuation became complicated.

[0006] This invention aims at offering the airline printer which can set easily the setting information which determines operating state as the contents for which it asks, when it is made in view of the situation mentioned above and newly connects with a network.

[0007]

[Means for Solving the Problem] It carries out providing a selection means were connected with the network which should acquire setting information required for job activation in this invention in order to solve the trouble which mentioned above, and also choose equipment, an acquisition means it was chosen by said selection means, and also acquire the setting information on equipment, and a setting means acquired with said acquisition means, and also set up the operating state of self-equipment according to the setting information on equipment as the description.

[0008] According to this invention, if it connects with a network, the other equipments which should acquire setting information required for job activation will be chosen with a selection means. Next, with an acquisition means, it was chosen and also the setting information on equipment is acquired, with a setting means, it acquired and also the operating state of self-equipment is set up according to the setting information on equipment. Therefore, when it newly connects with a network, it becomes possible to set the setting information which determines operating state as the contents for which it asks easily. Especially, it already connects on a network, and when making it the same as that of the setting information on other airline printers started, it becomes possible to mitigate actuation of a user.

[0009]

[Embodiment of the Invention] Next, the operation gestalt of this invention is explained with reference to a drawing.

[0010] A. The block diagram 1 of an operation gestalt is a block diagram showing the configuration of the airline printer by the operation gestalt of this invention. In drawing, the airline printer 100 consists of a control section 10, the storage section 20, the LAN interface section 30, the printing section 40, and a control unit 50. A control section 10 is equipped with CPU, internal bus IF, etc., and manages control of each whole device which constitutes an airline printer 100, and its condition. Especially, at the time of generating of a job-processing demand, each device is controlled so that job processing becomes possible from the condition of each grasped device efficiently.

[0011] The storage section 20 consists of storage, such as ROM, RAM, and a hard disk. ROM memorizes the program and setting information which described the processing and the control procedure which are performed by the control section 10, and is the nonvolatile memory which data can only read. CPU of a control section 10 is read from ROM of the storage section 20, whenever a power source is supplied to an airline printer 100, and it starts an airline printer 100. Moreover, RAM is used, when it is used as memory of a working-level month at the time of the program execution by CPU of a control section 10 or develops to the image data which can print the received print data. Nonvolatile RAM (NVRAM) memorizes the information set up according to the use application of an airline printer 100. The contents written in even if NVRAM was the nonvolatile memory which can be written in, and can change setting information by a user's application at any time and it dropped the power source are held. Moreover, since memory capacity is size, a hard disk is used when an airline printer 100 has the spool function which stores two or more print data.

[0012] The LAN interface section 30 functions as an interface of an airline printer 100 and LAN (Local Area Network) 70, and realizes data transmission and reception with the external device by which network connection was carried out. In addition, a data link protocol is not especially limited, although Ethernet, a token ring, etc. exist. The printing section 40 prints by reading the image data developed by the storage section 20. A control unit 50 is constituted by two or more carbon buttons and display screens, and performs various setup of an airline printer. An internal bus 60 carries out the bus connection of each unit of a control section 10, the storage section 20, the LAN interface section 30, the printing section 40, and control unit 50 grade, and is used for transmission and reception of the data inside an airline printer.

[0013] Next, drawing 2 is the conceptual diagram showing the network configuration to which the airline printer mentioned above was connected. On the network, at least two or more airline printers are connected, one set is newly connected airline printer 100a, and other one set is already started airline printer 100b so that it may

illustrate. Newly connected airline printer (setting information-requirements origin) 100a acquires the setting information on already started airline printer (setting information-requirements point) 100b, and performs the same setup as the this acquired setting information to a self-opportunity. In addition, it shall be the configuration which shows airline printers 100a and 100b in drawing 1 mentioned above.

[0014] As indicated in drawing 3 as the setting information mentioned above here, it is the information about starting and its detail setup of various network interfaces, such as information about the memory size of the information about maintenance, receiving buffer size, a font cache, etc. and a serial, parallel, and NetWare, and is the information which opts for printing actuation of an airline printer 100.

[0015] B. Explain actuation of an operation gestalt, next actuation of this operation gestalt. Here, drawing 4 is a flow chart which shows actuation of the airline printer (setting information-requirements origin) mentioned above. If the power source of airline printer 100a is switched on after newly connecting with a network 70, a control section 10 will start actuation according to the control program memorized by ROM of the storage section 20. First, a control section 10 is step Sa1, and judges whether the same setup is turned on. It is judged by referring to the value in the appointed address in the memory of the storage section 20 whether the same setup is ON. Moreover, ON/OFF of the same setting up function operates the control unit 50 of airline printer 100a, and is set up.

[0016] When the same setup is OFF, it progresses to step Sa12 and the existing setting information (for example, factory setting information) stored in NVRAM of the storage section 20 is referred to. A control section 10 is step Sa10, and starts airline printer 100a according to this existing setting information.

[0017] On the other hand, when the same setup is ON, a control section 10 is step Sa2, and searches other airline printers which exist on the network 70 connected. What is necessary is here, just to search the airline printer under current starting, when consider as a configuration whose airline printer broadcasts the mutual address as a search method of an airline printer, each airline printer is made to manage the table of the airline printer started on a network 70 and airline printer 100a asks the suitable airline printer on a network 70.

[0018] In the above-mentioned step Sa2, completion of retrieval of the airline printer which exists on a network 70 investigates whether the airline printer already started on a network 70 exists at step Sa3. Here, when the started airline printer does not exist, a control section 10 progresses to step Sa12, and refer to the existing setting information stored in NVRAM of the storage section 20 for it. And according to the above-mentioned existing setting information, an airline printer 100 is started at step Sa10.

[0019] On the other hand, when the started airline printer exists, directions are taken out with step Sa4 so that the airline printer which wants to acquire setting information to a user may be chosen with the display of a control unit 50. There is a method of opting for the airline printer with which airline printer 100a should refer to setting information automatically as a method which opts for an airline printer in addition to the approach as which a user is made to choose the airline printer of arbitration. By the approach which a user is made to choose, the approach of printing the list of searched airline printers (or display), and making a user input the number of the matched airline printer can be considered. Moreover, by the approach of opting for an airline printer automatically, the conditions (for example, network interface which you want to start) which a user demands are registered beforehand, and how to opt for the airline printer which fulfills conditions automatically can be considered. Furthermore, in the application in which the remote control from PC (computer) connected to the network 70 is possible, if an airline printer is chosen, it is possible to raise the operability of airline printer decision further.

[0020] In step Sa4, selection of the airline printer of the setting information-reference point performs the Request to Send of setting information through the LAN interface section 30 at step Sa5 based on the network address of this chosen airline printer 100b (suppose that airline printer 100b was chosen in this case). Next, it judges whether there was any response from airline printer 100b to the Request to Send of setting information at step Sa6. And when there is no response to the Request to Send of setting information, it progresses to step Sa11 and the purport which did not have a response to a user, or the purport that the same setup went wrong is notified. On the indicating equipment of a control unit 50, the notice approach displays the message "the same setup went wrong", or prints a message and should just output it. Moreover, in the application of PC, the method of displaying the dialog of a purport which went wrong is also considered. Furthermore, in step Sa11, after notifying a user of there having been no response, with reference to the existing setting information stored in NVRAM of the storage section 20, an airline printer 100 is started by step Sa10 at step Sa12 according to the

above-mentioned existing setting information.

[0021] On the other hand, when there is a response from airline printer 100b to the Request to Send of the setting information on step Sa5, it progresses to step Sa7 and airline printer 100b and connection are made. Next, the setting information transmitted from airline printer 100b is acquired at step Sa8. And based on the setting information acquired from above-mentioned airline printer 100b, airline printer 100a is set up at step Sa9. A setup is completed by writing in the setting information acquired to the appointed address of NVRAM in the storage section 20 of airline printer 100a. However, when a setup of the device name which overlapped on the network 70 is not allowed like the device name of a NetWare interface, a default device name is set up and a user is notified of a NetWare interface not starting normally.

[0022] What is necessary is just to print the form which displayed that on the display of a control unit 50, or described that as the notice approach. Moreover, in the application of PC, if it designs so that the O.K. carbon button of application cannot be chosen unless it notifies by displaying a dialog and a change of the device name of a NetWare interface is made, the same mistaken setup can be prevented, consequently operability can be raised. And after a setup of the setting information in step Sa9 is completed, at step Sa10, an airline printer is rebooted and the set point is confirmed.

[0023] Next, drawing 5 is a flow chart which shows actuation of an airline printer (setting information-requirements point). Setting information is already set up and it operates according to the flow chart shown in drawing 5 in the airline printer (it explains as airline printer 100b of drawing 2 hereafter) started on a network 70.

[0024] In airline printer 100b already connected to the network 70, an injection of a power source starts actuation at step Sb1 according to the control program memorized by ROM of the storage section 20. A control program starts airline printer 100b based on the setting information (see drawing 3) stored in NVRAM of the storage section 20. Next, it judges whether the same setting up function is turned on at step Sb2. Here, when the same setting up function is OFF, this step Sb2 is repeated and performed. Here, airline printer 100b is usually activation status, and though ON/OFF of the same setting up function is referred to, when a printing demand occurs to the airline printer 100b concerned, it always performs a print job.

[0025] On the other hand, when the same setting up function is ON, it progresses to step Sb3 and judges whether there is any Request to Send of setting information. Here, it is judged that airline printer 100b had the Request to Send of setting information when the Request-to-Send packet of the setting information broadcast by the airline printer (in the case of drawing 2 airline printer 100a) newly connected on the network 70 was received. If the Request to Send of setting information is received at step Sb3, it progresses to step Sb4 and a packet is analyzed, the address on the network 70 of the airline printer (in the case of drawing 2 R> 2 airline printer 100a) which performed the Request to Send will be gained, and the setting information stored in NVRAM of the own storage section 20 of airline printer 100b will be transmitted according to the this gained address. Then, return and actuation mentioned above are repeated and performed to step Sb2.

[0026]

[Effect of the Invention] As explained, when it connects with a network according to this invention, as mentioned above, with a selection means After choosing the other equipments which should acquire setting information required for job activation, with an acquisition means, it was chosen and also the setting information on equipment is acquired. Subsequently Since it acquired and also the operating state of self-equipment was set up with the setting means according to the setting information on equipment, when it newly connects with a network, the advantage that the setting information which determines operating state can be set as the contents for which it asks easily is acquired. Especially, it already connects on a network, and when making it the same as that of the setting information on other airline printers started, the advantage that actuation of a user is mitigable is acquired.

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[Translation done.]

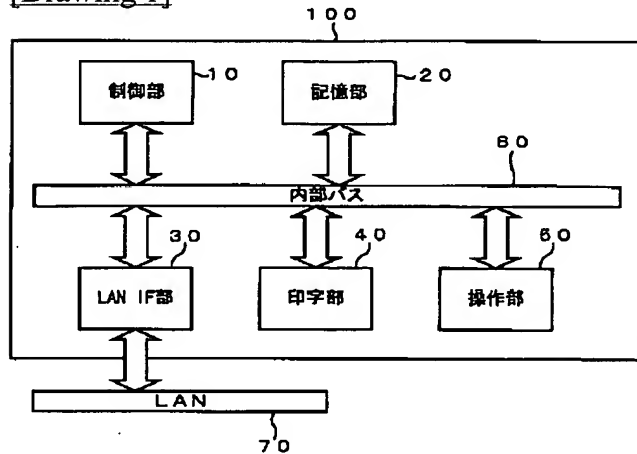
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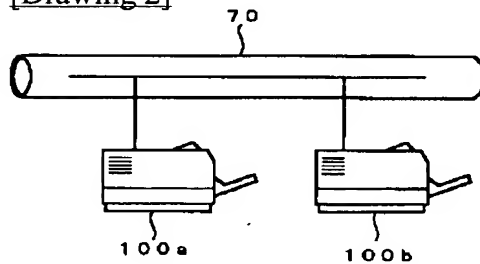
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## DRAWINGS

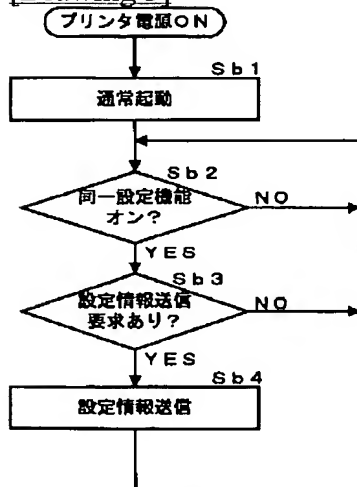
[Drawing 1]



[Drawing 2]



[Drawing 5]



[Drawing 3]

## 保守設定

設定項目	設定値
スタートページ	OFF
ジャムリカバリ	ON
プリント履歴自動排出	OFF
IPX/SPX 設定	動作フレームタイプ
	プリンタ管理エージェント
	AUTO
	停止

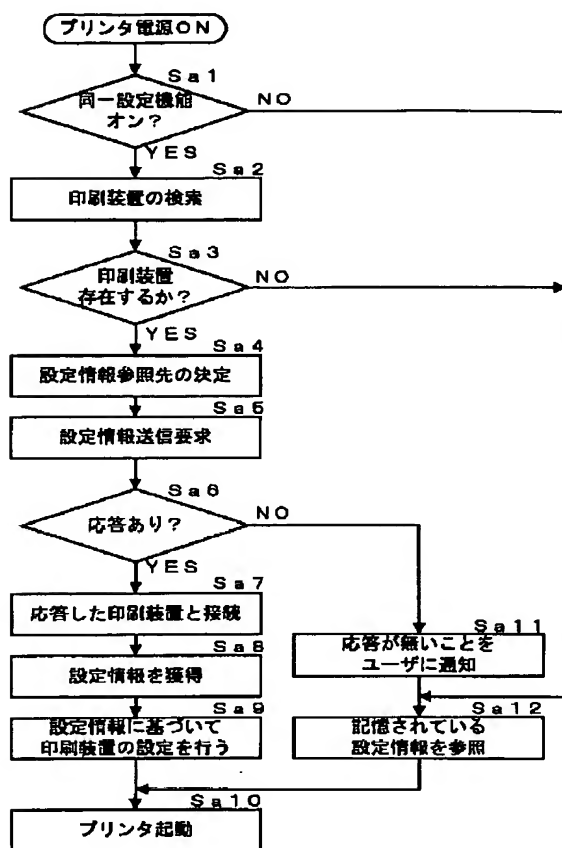
## メモリ設定

設定項目	設定値
フォントキャッシュメモリ	1280KByte
受信バッファメモリ	パラレル
	64KByte
	lpd
	1.08KByte
	NetWare
	64KByte
	AppleTalk
	64KByte

## インターフェース設定

設定項目	設定値
シリアル	起動
	OFF
パラレル	起動
	ON
	Adobe通信プロトコル
	Standard
	自動排出時間
	30秒
	双方向モード
	ON
NetWare	起動
	ON
	動作モード
	クライアント:Peerモード
	装置名
	FX PRINTER
	ファイルサーバ名
	FileServerName
lpd	起動
	ON
	トランスポート
	プロトコル
	TCP/IP
	ON
	IPX/SPX
	OFF
	ON
	ON
EtherTalk	フォントキャッシュメモリ
	OFF

[Drawing 4]



[Translation done.]